# 7 The affordances of wikis for virtual exchange

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## Abstract

This chapter will describe the ways wikis can benefit students, teachers, and administrators as well as provide examples of ways they can be used in the language and culture classroom for Virtual Exchange (VE). It will specifically examine how the tool was used for a collaborative research paper and explore how students can think critically to decide how to draft, edit, and revise the paper into a unified voice. Throughout the process, writers are thinking metacognitively about their writing and that of their counterparts. Furthermore, using written or verbal comments and visual markup within the wiki itself, recursive feedback loops between teachers and students are created in real-time but also recorded for later reflection. Finally, the tool also allows for a multitude of data points to be collected and analyzed for fair and valid assessment that is data driven. Teachers and administrators can see exactly who wrote what, when, and how long it took them. Therefore, the quantity and quality of the contributions can be assessed. Wikis are a powerful tool that can be harnessed in the language classroom for intercultural VE in a myriad of ways with an assortment of benefits.

Keywords: virtual exchange, wikis, metacognitive, recursive feedback, data-driven assessment.

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# 1.    Introduction

## 1.1.    Wikis

A wiki, as mentioned elsewhere (Kaufmann, 2018), is a living document that exists online. The term 'wiki' is derived from the Hawaiian phrase, wiki-wiki, which means quick. A wiki is a collaborative web site whose content can be viewed and modified by visitors to the site. This allows users to easily create and edit the web pages, or wikis, collaboratively (Chao, 2007). Users who have permission can view and modify it in real-time. Each team member of the project can store, collate, and restructure ideas together (Howland, Jonassen, & Marra, 2013). The most well-known example of one is Wikipedia. Most Learning Management Sites (LMSs) now have wiki tools which are very useful for a variety of collaborative projects. Popular word processing software applications like Google Docs, Microsoft Word Online, and QQ Docs have a 'track changes' feature or 'revision history' that can emulate the features of a wiki. Dropbox Paper, Crocodocs, PBwiki, Wetpaint, and ZohoWriter are additional websites that focus solely on wiki creation and collaboration.

Wikis support writing instruction (Lamb, 2004) and have many benefits that assist teachers and students working on improving the writing process: reflection, reviewing, publication and watching the process unfold (Fountain, 2005). Such a process encourages higher levels of thinking that are aligned with Bloom's (1956) taxonomy. Some of the first to use wikis in education were Chao (2007), Evans (2006), and Schaffert et al. (2006). Parker and Chao (2007) explained that wikis are tools for group authoring. Previously, group members would have to collaborate on a document by emailing files to each other while they made revisions on their respective computers, then they would attempt to coordinate the edits into a single combined voice. A wiki exists on the internet rather than individual computers and allows the group members to work from a single, central wiki page. Wikis allow for a self-contained document where multiple users can collaborate within the same digital space. Through the use of wikis, educators can give their students the benefits detailed by Fountain (2005) and gain insight into the metacognitive strategies used by their students.

Another beneficial metacognitive strategy is recursive feedback, "[t]he feedback can be recursive in the sense that it prompts a response that prompts further feedback. Feedback on feedback ('That was helpful/not helpful') can also produce a quick response. Such feedback is immediately actionable in specific ways" (Cope & Kalantzis, 2016, p. 7). This can allow for more personalized learning and can help the reader as well as the writer.

The teacher's comments can form a continued dialog between them and the student as a means of formative grading. In terms of assessing collaboration, McNely et al. (2012) have studied the learning analytics of collaborative writing in similar online writing environments and how it can be used as a form of intervention for non-collaborating learners. Their learning environment and research findings were similar in many ways. They found, "much of our participants' workflow practices in co-located collaborations are ephemeral and thus do not render metrics that can be easily captured and measured" (McNely et al., 2012, p. 2). Through the use of wikis in non-co-located environments, teachers and researchers can capture and measure the very interactions that were previously ephemeral.

Using the track changes or revision history features new things can be examined. The edit histories contain a robust amount of unstructured, incidental data (Cope & Kalantzis, 2016). The information garnered from this feature can transform the assessment process to one that is more ubiquitous, recursive, fair, and valid to students. Wikis are ubiquitous forms of assessment in the sense that the instructor or teaching assistant can log in and provide feedback at any time and from anywhere during the writing process. Furthermore, if the students are logged in at the same time, they can even see the comments taking place in real-time. This feature has the potential to transform assessment from something very linear (e.g. grading a final, polished paper) into something more recursive and process-oriented – e.g. grading quantity and quality of involvement in the process (Cope & Kalantzis, 2016).

Through the usage of wikis, metacognitive strategies are essential to the entire process of producing a work as students need to think about the work of their

peers and how their contributions can be combined to create a more cohesive final product.

> "The arbiters of quality are readers and other writers, and all can engage in dialogue about the veracity or otherwise of the content in the edit, and edit history areas, a public metacommentary on the page. The roles of writers and readers are blurred. Textual validation is an open, explicit, public and inclusive process. This represents a profound shift in the social relations of writing and reading" (Kalantzis & Cope, 2011, p. 45).

They also posit,

> "in fact, many web spaces have these kinds of metadialogue or dialogue about dialogue, for instance, in blog comments, video reviews or wiki edit histories for instance. We need to be able to read not just the text, but the subtexts. New media writing environments work as reciprocal ecologies of knowledge validation. They are full of metadialogues about perspective and interest" (Kalantzis & Cope, 2011, p. 69).

## 1.2.    Wikis as pedagogical tools

As explained above, wikis can be used to monitor and properly assess student contributions on collaborative research papers. This allows students to work on their paper with their peers anywhere they have an internet connection. Wikis are particularly useful where group members are contributing from a variety of times of day, time zones, and from geographically dispersed locations. Through this tool, students can be in different geographic regions and still collaborate on assignments and projects.

The tool also allows the instructor to make revisions and comments in real-time that students can see instantly. This way the students do not need to wait until after they turn in an assignment to see the instructor's feedback. This process generates a recursive feedback loop that fosters metacognitive thinking (McNely

et al., 2012). Furthermore, this eliminates the excessive use of paper and printing costs, making it more eco-friendly.

A common pitfall of collaborative writing assignments is where one student does all the work but there is no way for the instructor to truly determine and prove if this was the case or not. Wikis overcome this problem due to their comprehensive revision history which displays all of the edits to the document for the instructor. This granularity of data is useful to verify student contributions and provide sufficient evidence to grade each student in a fair and reliable manner. With this tool everything that is entered into the wiki, from infinitesimal, incidental data to macroscopic changes, is recorded, viewable, and can be quantified into a variety of metrics.

There are drawbacks to wikis and the biggest one is the learning curve. It takes some time for students to familiarize themselves with the software and they often forget to log in and make changes under their own names. This can be scaffolded with in-class activities like chain stories, live peer review sessions, or explicit writing instruction. Any activity that allows students guided practice to interact with the software and for the teacher to show their administrator view to the class will be extremely useful.

Learning communities are essential to any good VE (Wihlborg, Friberg, Rose, & Eastham, 2018) and Gilbert, Chen, and Sabol (2008) have outlined a straightforward approach to using wikis to build learning communities (ColumbiaLearn, 2008).

Thus, there are a variety of ways to implement a wiki into different contexts and for different purposes. Later in this chapter, some ideas for potential uses for using wikis in VE contexts will be examined, but the next section focuses on a particular context. It will attempt to depict a more detailed example of how a wiki can be used. It was for a 12-week introduction to research writing course in a Sino-American partnership program in a small city in China. While the course was conducted primarily onsite and co-located, the use of a wiki and videoconferencing software could allow it to be taught with the instructor in

America and the students in China. It should also be noted that often the students were in different regions of China when they wrote and collaborated on their research paper. The students were tasked to write an ethnography on linguistic landscape analysis or ethnographic linguistic landscape analysis pedagogy (Kaufmann, 2019).

## 2.     Method and study details

### 2.1.     Course design

In a 12-week introduction to research writing course, sophomore English majors in a Sino-American degree program were instructed on the fundamentals of research. They were asked to choose a research site, conduct ethnographic research on the visibility and saliency of languages (English) in the world around them (Landry & Bourhis, 1997) and write a research paper on their findings.

The course progressed with instruction on a given component of a research paper followed by guided practice in class. Next, the students were tasked to draft given components of the paper and submit it for grading. They were instructed not to use any other word processing software other than the wiki. The instructor checked in on their work periodically throughout the week to offer guidance and support through comments and revisions creating recursive feedback. In 2020, due to the impact of COVID-19, this same course will be conducted while the instructor is in the US and the students are quarantined in their homes throughout China.

Every three weeks, teacher-student feedback sessions were held to discuss salient features of the papers and offer guidance with revisions. In the first phase, much of the discussion centered on explaining how to use the wiki and the importance of doing so. It should be noted that this might prove to be more difficult in a virtual environment but would not be impossible. Showing the instructor and student view in real-time during a scaffolded activity has proved to be an effective means of navigating students through the system. The biggest

issues of the conferences during Phase 2 related to finding a unified voice and collaborating effectively which the wiki aided in through things like recursive feedback loops. Finally, Phase 3 workshops centered on organizing the papers and using the software for formatting and style issues.

## 2.2.    Activities

There are a variety of activities that can be done to scaffold the learning and assist in helping the students become successful. These revolve around modeling the task from the computer and projector for the students and having them attempt it within their own wikis. As their skills improve, they can also peer review other groups' wikis and think critically about the changes they are making and also the changes that have been made to their own papers.

Furthermore, some students have a tough time transitioning into how to write collaboratively and what to look for when proofreading. Some managed to divide the work up well while others required extensive tutorials. Oftentimes in collaborative writing, the document will contain distinct paragraphs on the same topic but in different voices. The revision history makes this even more apparent when each paragraph is attributed to a unique student. Showing students this revision history allows them to see the lack of cohesiveness, and it can help them understand what is expected in terms of active collaboration and contribution.

### 2.2.1.   Live demos

Students were asked to view some sample abstracts and color code them, (e.g. make the thesis statement blue, research questions red). This was also done on the wiki platform in real-time to introduce students to the platform and scaffold the learning process. In addition to teaching about the components of an abstract a live demonstration of the wiki was also possible. The instructor can monitor all of the students' progress, handle technology issues, and assist with the features of the abstract by using the software to color code it. This type of visual markup activity was used by Cope and Kalantzis (2016) to diagram the text. Outlining structures was also used by Olmanson et al. (2015) to show the pedagogical

benefits of students supporting one another in the writing process. In order to stimulate motivation further, this activity was made into a game and the first groups to finish the task correctly were awarded participation points for the day. Once the relevant features were understood and analyzed through a class discussion, the students were equipped to draft their own abstracts.

### 2.2.2. Peer review

It is beneficial to have students review other groups' papers for the benefits of a peer review (metacognitive) and to understand what revising looks like in a wiki. Permission to view and edit can be granted or revoked to specific users within the software in order to facilitate the peer review process. Students can be instructed to proofread or look for key features within a given text. They can be instructed to highlight all the in-text citations, elements of modern language association style, or look for transition markers. It is also very beneficial for students to observe the use of active and passive voice and first-person pronouns throughout the paper as these are common pitfalls made when writing research papers. This is another type of activity that can be done with or without a wiki to improve students' understanding of the software and to help them write better research papers.

### 2.2.3. Comments

Face-to-face discussions are very valuable to provide feedback to students, but web conferences offer similar benefits. Another feature of wikis is where the instructor can highlight certain portions of text and comment on them. This could potentially facilitate an asynchronous discussion of sorts with the student commenting on the comments or making the prescribed revisions and seeking clarification. The comments are generally visible on the right-hand side of the manuscript and they can even be made via voice recording in some software. The instructor can also access the wiki and proofread or modify certain portions within the document directly and the students can review the changes that were made. It is like having a mentor or collaborator assisting with the writing process from the very moment you log in. Students are given a notification that a change

has been made and can view the feedback as soon as they access the wiki. This type of functionality can expedite the review process by providing feedback in real-time.

## 2.3.    Assessment

Understanding how wikis are used to assess based on the name of the student and their contribution was a difficult concept for students to grasp at first. There is certainly a learning curve in using the software as students sometimes mention that they wrote the paper on their friends computer while they were signed in, or they wrote it while they were co-located (if they are in a VE environment, this will not be an issue). Some even provided data of where they supplied the ideas in the L1 (Mandarin) in another app while teammates translated for them into the wiki. These are potential threats to validity in that students may in fact be contributing, but there is no data to support it in the wiki. This is a common pitfall of the platform but stern grading aids the students in ascertaining expectations for the class and their conduct within it.

Sometimes, students start by writing their own paragraph in a word processing software like Microsoft Word and paste it into the wiki. This would be rather obvious in traditional print due to redundancies in the writing, but wikis make it abundantly clear who wrote what and when. If the students copy entire paragraphs into the wiki in a matter of seconds, the teacher can see that they are not using the tool properly. Again, live demos and 'wiki-scaffolds' (Higginbotham, May-Landy, & Beeby, in ColumbiaLearn, 2008) are essential to eradicating this behavior. This summarizes one way a wiki could be used in a particular context, in this case a dual degree program, but there are many others.

## 2.4.    Ways to incorporate wikis into VE

How can wikis be implemented into other VE contexts? They can be used for small assignments or even large projects depending on the needs of the class, but they are all tasks. Nunan (1989) defines a task as "a piece of classroom work which involves learners in comprehending, manipulating, producing or

interacting in the target language while their attention is principally focused on meaning rather than form" (p. 10). The emphasis is not on linguistic structures of language but holistic meaning. It should also be noted that when using web 2.0 tools such as wikis, anything that simply replicates pen and paper for keyboards and monitors is not harnessing the power of the platform effectively. Digital literacy tasks should be immersive and engaging[2]. While one could simply use a wiki as a means of creating a simple website, it is not effectively harnessing everything that the tool affords. As described above, the benefits of the tool lie in the recursive feedback loops that are created and the ability to track and trace the quantity and quality of participation and collaboration. While several studies have used wikis (Forsythe, 2014; Mitchell, 2016) in VE environments, they have not used them to their fullest potential. The following tasks are collaborative and participatory, engaging a broader audience, where a group of students negotiate meaning and decide on a final text to be used by a group of learners that can interact with the ideas.

In joint venture programs like the one previously mentioned between a university in the US and China, wikis could also be used for a type of pen pal exchange activity. Students could simply introduce themselves like (Forsythe, 2014) did. Groups of students from one country could also collaborate on a page related to some unique aspect of their culture like how different holidays are celebrated or a popular news article. If the university hosts any service learning projects or study abroad experiences, the participants could create a page that culminates on the experience with pictures, text, and even video. Students could get together and discuss critical incidents like plagiarism. They could do this with something as simple as sharing a Turnitin report and discussing why it had been flagged for plagiarism or more nuanced where students could help each other to draft a properly cited essay and explain the importance of doing so. Finally, if some students have matriculated to the host institution they could reflect on their experiences and tell future students what to expect. This could not only entice more students to go abroad but allow traveling students to maintain a connection to their home culture and stay abreast of happenings there. These are just some

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of the ways that a dynamic page could be developed and maintained by groups of authors and readers around the world in a partnership program.

There are many more reasons and benefits for a wiki. If an instructor of a course is traveling for a conference or for some reason unable to physically attend class, they could upload a lecture video and assign their students a writing task. The metadata of the wiki will show exactly who is contributing, when they are contributing, and how much. Any type of collaborative academic paper could also harness the affordances of a wiki and transparent assessment. Additionally, students could use a wiki to take notes from a class and share them with others who are watching the lecture videos asynchronously.

Wikis can also be used in classroom activities like brainstorming or exit tickets. In this case, a wiki could take the place of a forum or chat tool. The teacher could post a few warm up questions to the wiki and let the students 'talk with their fingers' in real-time and show their background knowledge. This could give students who are reticent to speak a chance to share their thoughts in another medium. The page can be viewed in real-time and it can also serve as a springboard into a deeper discussion or lecture. Exit tickets can also be done with wikis where the teacher asks students a simple question at the end of class and they reflect on the day's instruction. This can be used to either supplement the chat tool in a videoconference session and/or allow students to contribute asynchronously. Instead of one student speaking and the others listening, they can engage in an act of participatory culture (Jenkins, 2006).

Hagley's (2016) international VE project and similar platforms could use wikis for more complex tasks than forum posts. With a wiki they could engage in discussing and agreeing on a polished final product, e.g. a travel brochure or food recipe. Students could work together on designing their ideal house and explain the cultural elements within it. In groups, they could devise a travel itinerary for their exchange partners. The teachers in the project could use it as a platform to collaborate on a single rubric for assessment criteria or discuss progress among their students. They could even create an entire curriculum together from different locations in the world. In terms of assessment, a wiki would allow the

instructor to see the minutiae of data that corresponds to keystrokes into creating shared documents. In a small-scale exchange, two teachers could simply use a wiki as the platform for the entire VE environment.

University writing centers could utilize wikis in a way to discuss works in progress when the participants are not co-located. If students are participating in a study abroad program or connecting with other schools in the target language to work on a text, through annotations and revisions made to the wiki by writing center tutors, students can understand the explicit areas of their paper that need improvement. Ideally, this would be coupled with video chat synchronously to really explain the comments, but it need not be. Wikis allow for audio feedback and the writing center staff can record their voice to explain complex aspects of feedback.

Massive Open Online Courses (MOOCs) could also benefit from using wikis. Research has shown that social learning communities and participation in forums is effective at curbing attrition rates (Crossley et al., 2015). MOOCs could be designed to incorporate wikis for student assignments to demonstrate mastery of course material. Chi, Zhang, and Kulich's (2016) intercultural communications MOOC could have the students do the assignments in a wiki as opposed to a forum. Or, in groups, they could synthesize a final draft of several of the assignments. Furthermore, the mentors and groups could use a wiki to organize all of the discussions instead of WeChat (Chi et al., 2016).

A hyperdoc is a standalone lesson where students are given a set of instructions and are asked to complete them within the document. It is like a digital worksheet, but much more engaging and inquiry-based learning driven. They could be given a link to a page and asked to summarize or reflect on its contents. The students could be asked to complete an outline or table or simply find the answer to a question. Hyperdocs are used in flipped classroom and blended learning modalities where students take charge of their learning and seek out the answers on their own (Highfill, Hilton, & Landis, 2016), but they could also be employed in a VE setting. The teacher could lecture on salient features of the hyperdoc that students struggle to demonstrate mastery in.

Wikis could even be used as a forum for debate. They could supply research to support their opinions and attempt to persuade the moderators of their ability to create compelling arguments. A wiki could allow for teams of students to work together on a draft of arguments and refine each other's statements.

Online learning environments like VIPKid and 51Talk for native speakers of English (often in western countries) could also be used to interact with students in non-English speaking contexts like China. These platforms have been a successful means of spoken VE but seem to lack a real written component. Using a wiki, a student or a group of students could work on a writing assignment and get feedback from a team of teachers around the globe (Ko, 2019).

## 3.    Pedagogical and workplace principles

One of the benefits of using a wiki for collaborative writing involves fair and valid assessment for every student based on their individual contributions to the paper. Students can benefit from individualized feedback in real-time from their instructors and peers. They are also able to collaborate with peers and form a unified voice in the living documents. Furthermore, students can communicate with people all around the globe and exchange ideas in a myriad of ways.

Teachers can use the tool to organize materials and assignments in one place and assess contributions in a fair and valid manner. Teachers can see exactly who wrote what and when in a collaborative environment. They can see the process of learning taking shape and unfold through the revision history of the wiki. Furthermore, this technology can be harnessed to create new pedagogical methods that were not possible with pen and paper.

The tool benefits administrators in allowing them to have a transparent view of what types of things the students are learning and producing. They can assess adherence to curriculum and standards and make more informed decisions based on the data from the wiki. Different schools and colleges can

communicate with one another from anywhere on the planet and exchange in a virtual environment.

There are challenges to the validity of this assessment method. Times when students do not make changes to the wiki while logged in under their own username, e.g. using a friend's computer, can be problematic. The changes made could erroneously be attributed to the person who was signed into the wiki and not the one physically behind the keyboard making the contribution is another area the teacher needs to be cognizant of.

The amount of data that can be harvested from a wiki allows assessment in new ways and offers other pedagogical possibilities. Cope and Kalantzis (2016) state,

> "[c]omputer-mediated environments can support immediate machine feedback by means of natural language processing, [computer adaptive testing], and procedure-based games, for instance. They can also offer extensive peer and teacher feedback by streamlining the complex social processes of machine-mediated, argument-defined human feedback" (p. 7).

Wagner (2008) posits there are seven skills necessary for students to learn in order to be successful in the workplace: (1) critical thinking and problem solving, (2) collaboration across networks and leading by influence, (3) agility and adaptability, (4) initiative and entrepreneurism, (5) effective oral and written communication, (6) accessing and analyzing information, and (7) curiosity and imagination. Writing collaboratively in a wiki allows students to develop many of these skills that are viewed as desirable by employers across the globe. Parker (cited in Wagner, 2008, n.p.) adds,

> "[o]ur business is changing, and so the skills our engineers need change rapidly, as well. We can teach them the technical stuff. But for employees to solve problems or to learn new things, they have to know what questions to ask. And we can't teach them how to ask good

questions – how to think. The ability to ask the right questions is the single most important skill".

We are seeing an emphasis on soft skills and using wikis can certainly help develop collaborative problem-solving skills in VE contexts through questions and answers with teachers and classmates.

The very process of writing a research paper is a very critically thought out one. It encompasses history, methodology, and a deeper understanding of complex issues. Collaborating on a research process metacognitively strengthens the students' understanding of these skills. Workplaces of the future will involve or already involve collaborating with others from all over the globe on various facets of unique projects. Annmarie Neal (cited in Wagner, 2008, n.p.) mentioned,

> "[w]hat do I really need to understand about this; what is the history; what are other people thinking about this; how does that all come together; what frames and models can we use to understand this from a variety of different angles and then come up with something different?".

Using wikis for intercultural learning can lead students to a deeper understanding of the world and allow them to formulate answers to these types of questions. This will make their lives more culturally rich, their learning experience more fruitful, and ultimately, make them better employees in workplaces of the future. Again, through using a wiki, students will gain the very soft skills employers are looking for in terms of having metadialogs with superiors and coworkers. These are only the first two skills mentioned but many more of the essential seven are harnessed through this activity, e.g. accessing and analyzing information.

## 4.    Conclusions

This chapter introduced wikis and how they can be used for collaborative writing. It also looked at reflections from students' papers. It showed how

using wikis in collaborative writing projects has helped students find their own unified voice as academic writers, develop metacognitive strategies, and generate opportunities for recursive feedback. This same tool can be used to allow students to work on writing tasks asynchronously when they are not co-located. Furthermore, wikis allow the teacher the opportunity to see exactly what has been written, when, and by whom, and this can be beneficial in a variety of VE contexts. This tool can help teachers assess individual contributions to group writing projects fairly and accurately. Additionally, the time it takes for students to receive feedback on their work is lessened dramatically.

Specifically relating to VE, there are several affordances. Firstly, digital tasks of any kind are beneficial to student's technology skills[3]. In the context of discussing plagiarism, a wiki can stimulate robust, enriching conversation surrounding deeper understanding of the concept and higher order thinking skills. Without tools like wikis, VE would be very difficult if not impossible. Wikis provide a shared space for students to formulate ideas and hash them out collectively. In VE, it is not always possible to have everyone speak at the same time, even during a synchronous session. This results in a muddle of voices and ultimately just noise. Having a discussion in a wiki allows everyone's voice to be heard without overloading the participant's listening abilities. Real-time collaboration can serve to give everyone a chance to 'speak' and be 'heard' that can also be utilized asynchronously to reflect on what was said and built upon previous statements. Forums are great at facilitating conversations in virtual environments but certain tasks lend themselves to more unified products. In a sense, forums are static while wikis are dynamic. Writing centers can also benefit from using wikis to be immersed within the document during the revision process. Wikis can actually be used in lieu of certain features of an LMS. Learning guides complete with links to content and directions for assignments can be created and shared. If a student has a question about a certain aspect of the learning guide they can ask it right inside the wiki and the instructor can provide an answer for all students to view. Finally, wikis provide a means for feedback and revision in writing instruction to take place in asynchronous VE environments.

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3. https://www.iste.org/standards

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